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ABSTRACT

The effectiveness of noncognitive variables in predicting college grades and persistence for international students over 8 semesters was studied at the University of Maryland, College Park. The Noncognitive Questionnaire (NCQ), an instrument designed to assess eight noncognitive variables found to be related to academic success for U.S. minority students, was administered to 248 freshmen international students. The noncognitive dimensions on the NCQ are: self-confidence, realistic self-appraisal, especially regarding academic abilities, community service, knowledge in a field, leadership experiences related to cultural background, preference for long-range goals, understanding racism, and having a strong support person. Different noncognitive variables were significant predictors of college grade point average (GPA) and persistence across the 8 semesters. Self-confidence and availability of a strong support person consistently predicted GPA. Persistence as found to be related to an aggregate of variables, but understanding racism and community service consistently predicted persistence. This finding suggests that GPA is related to individual variables while persistence may require an additional adjustment to environmental variables. (Author/SW)

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NONCOGNITIVE PREDICTORS OF ACADEMIC SUCCESS FOR INTERNATIONAL STUDENTS: A LONGITUDINAL STUDY

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SUMMARY

The Noncognitive Questionnaire, an instrument designed to assess the eight noncognitive variables found to be related to academic successs for U. S. minority students, was administered to 248 freshmen international students at the University of Maryland, College Park. This study found that different noncognitive variables were significant predictors of college grades and persistence across the eight semesters studied. Self-confidence and availability of a strong support person consistently predicted GPA. Persistence was found to be related to an aggregate of variables, but understanding racism and community service consistently predicted persistence. This suggests that GPA is related to individual variables while persistence may require an additional adjustment to environmental variables. Suggestions for educators and student service professionals are provided.

As a result of dwindling student enrollment in United States colleges and universities, admissions offices have increasingly turned toward international students as an alternative source of recruits (Thomas, 1974). Over the last two decades, there has been a dramatic increase in international students attending U. S. higher educational institutions. The Institute of International Education has projected that there may be more than one million international students enrolled in U. S. colleges and universities by the year 2000, if international student enrollment continues to increase at the present rate, (Goodwin & Nacht, 1983).

There is an extensive body of research concerning the adjustment difficulties of international students on U. S. campuses. In addition to the problems common to all college students, they are often faced with financial difficulties and immigration problems. International students also experience problems that directly result from their encounter with a new culture (Nickelly, Sugita & Otis, 1964; Zurin & Rubin, 1967). They must become acclimated to the unfamiliar U. S. academic system which means that, in addition to mastering course material, they have to become familiar with a new grading system and the differences between units and credits, semesters and trimesters, etc. They also have to become accustomed to the use of discussion sections and numerous multiple-choice exams (Maxwell, 1974). While international students face difficulties and adjustments as

students on U. S. campuses, they also have been found to have strong academic skills, high educational aspirations, and positive attitudes toward their school (Manese, Leong & Sedlacek, 1985; Manese, Sedlacek & Leong, in press; Leong & Sedlacek, 1986; Boyer & Sedlacek, 1986; Carter and Sedlacek, 1986).

Despite the extensive literature on international students, much remains to be learned about the variables related to their academic success (college grades and persistence). Now that the pool of college-age students has decreased, retention has become an issue critical to the survival of many institutions of higher education, where students who drop out may not be replaced, as in the past (Shulman, 1976). Overall, retention may be more cost effective than recruitment (Astin, 1975). In addition to the economic benefits of reducing attrition, educators and administrators have a moral responsibility to increase the probability of academic success for international students. One means of increasing retention is to improve selection and admission procedures (Ott, 1978). However, most admissions criteria and procedures have been validated on White samples from the U. S. (Tracey & Sedlacek, 1984).

Researchers studying student attrition and retention have identified a set of eight noncognitive variables (Sedlacek & Brooks 1976; Sedlacek, 1977) that are related to college grades and persistence, especially for minority and nontraditional U. S. students. Tracey and Sedlacek (1984)

devised the Noncognitive Questionnaire (NCQ) to measure these variables. The NCQ has been shown to be predictive of grades for Black and White students, of continued enrollment for Black students (Tracey & Sedlacek, 1984, 1985), and of graduation for Black and White students (Tracey & Sedlacek, 1987). The NCQ has also been shown to correlate with academic success for specially-admitted students (White & Sedlacek, 1986), and for usage of counseling center services by Black and White students (Arbona & Sedlacek, 1987).

The present study examined the effectiveness of the noncognitive variables in predicting college grades (GPA) and persistence for international students, across eight semesters.

Method

Subjects and Procedures

The NCQ was administered to all entering freshmen international students attending orientation (N=248) at a large, eastern, state university in the fall of 1981. Cumulative GPA and enrollment status for each student were obtained from university records for each of the eight semesters following matriculation. The predictive validity of the NCQ was examined using cumulative GPA and persistence as criteria.

Instrument

The NCQ (Tracey & Sedlacek, 1984) is designed to assess eight noncognitive variables and contains 23 items: 18 Likert-format items, 2 multiple-choice items on educational

aspirations, and 3 open-ended items pertaining to present goals, past accomplishments and other activities. Test-retest reliabilities over a two week interval ranged from .70 to .94 for each item, and the median test-retest reliability was found to be .85 (Tracey & Sedlacek, 1984). Construct validity on the eight noncognitive dimensions was demonstrated using factor analysis (Tracey & Sedlacek, 1984).

The eight noncognitive dimensions on the NCQ are: (1) self-confidence, (2) realistic self-appraisal, especially regarding academic abilities, (3) community service as demonstrated by involvement in local community activities during the years preceding college, (4) knowledge acquired in a field, including unusual and/or culturally related ways of obtaining information and demonstrating knowledge, (5) successful leadership experiences in any area related to cultural background, (6) prefers long-range goals over short-term, immediate goals and is able to defer gratification to attain goals, (7) understands and copes with racism, and (8) availability of strong support person to turn to in crises.

Analyses

Multiple discriminant analysis was employed to predict persistence and multiple regression was employed to predict grades.

Results

Table 1 lists the number of students enrolled, not enrolled, and the percentage of students no longer enrolled. The percentage of students who left the university increased

over time, from 9% after 1 semester to 39% after 8 semesters.

Insert Table 1 about here

Table 2 shows canonical correlations and multiple correlations predicting persistence and grades of international students over eight semesters. All correlations were significant beyond the .05 level.

Insert Table 2 about here

Predicting Persistence

The noncognitive variables that significantly added to the prediction of persistence are listed in Table 3, in order of their entry into the equation. Community service and understanding racism significantly added to the prediction of persistence for each of the eight semesters. Community service was the best predictor for semesters 2, 3, 4, and 5, while the strength of understanding racism as a predictor varied across semesters. Generally, the noncognitive variables were effective in predicting persistence, with the mean (rounded off to the nearest whole number) and modal number of variables predicting persistence for each semester equal to 7, and the number of noncognitive variables predicting persistence across semesters ranging from 5 to 8.

Insert Table 3 about here

Table 4 lists the percentage of students who were correctly classified as persistors and nonpersistors using the NCQ. These percentages varied from 63% to 75%, and were higher in earlier semesters.

Insert Table 4 about here

Predicting Grades

Table 3 shows the noncognitive variables that predicted cumulative GPA for each semester, in order of their entry into the equation. Self-confidence and availability of a strong support person were predictive of grades for all semesters examined. Other noncognitive variables that significantly predicted GPA included realistic self-appraisal (1st, 2nd, and 7th semesters), understanding racism (1st semester), leadership (2nd and 5th semesters), and preference for long-range goals (8th semester).

Discussion

The results of this study have shown that different noncognitive variables were important predictors of GPA and persistence, across the eight semesters studied.

An interesting pattern emerged in comparing variables predictive of GPA with variables predictive of persistence, for international students. Self-confidence and availability

of a strong support person consistently predicted GPA across the eight semesters examined. This is understandable in light of the many academic adjustments international students must make (Maxwell, 1974). For these students, feeling confident, determined and independent, and having another individual to whom to turn in crisis, were important determinants of adjustment to academic demands and attainment of academic success.

In contrast, many more variables were significant in predicting persistence. This implies that persistence may be related to an aggregate of variables for international students, including those that are predictive of GPA.

This is consistent with the work of Tinto (1975), who suggested that many different forms of behavior, both academic and social, are involved in persistence. He distinguished between the academic and social domains of college, indicating that a person may be able to achieve integration in one area without doing so in the other. Tinto stated that a person can be integrated into the academic sphere of college (e.g., attain high grades) and drop out because of inadequate integration into the social domain. On the other hand, a person may achieve success socially but be unable to perform adequately academically. With the numerous challenges and difficulties confronting international students at U. S. colleges and universities, it is not surprising that all of these variables were related to persistence, at one time or another, across the eight

semesters studied.

Even though a number of variables were associated with persistence, two variables, community service and understanding racism, were the most consistent. It appears that while their grades depend largely on individual variables (self-confidence, availability of a strong support person), persistence, for international students, is additionally related to their adjustment to the system or the external environment.

Thus, providing student services to increase international student success requires a wide range of offerings. Individual counseling or a mentor relationship may help more in improving grades, while student activities and workshops on understanding racism may help international students stay in school.

How do these results compare with those found by Tracey and Sedlacek (1985), in their study of Black and White U. S. students? They found that self-confidence and realistic self-appraisal were predictive of GPA for both Black and White U. S. students, across all semesters examined. In the present study, self-confidence and availability of a strong support person were important predictors of GPA for international students, across all semesters studied. Therefore, for international students, the availability of a strong support person, rather than realistic self-appraisal, predicted GPA. It may be that, for international students, living in an environment with different values and customs

makes it difficult to realistically appraise one's performance, so that availability of a strong support person becomes important in predicting grades. Tracey and Sedlacek (1985) also found that a mean of one variable predicted retention for White students, whereas a mean of three variables predicted retention for Black students (means rounded off to nearest whole number). With a mean of seven variables predicting persistence for international students in the present study, it might be that the process of retention becomes increasingly more complex as one moves farther away from the traditional, white, middle class student. Future research is needed to further test this hypothesis.

Given decreasing enrollments in U. S. colleges and universities, the need for academically talented students, and the increasing number of international students applying to U. S. colleges and universities who have strong academic skills, higher educational institutions should examine their policies concerning international students. Nontraditional predictors, such as the NCQ, can be used for improving admission procedures for incoming international students and for designing proactive interventions, to maximize these students' likelihood of success. As suggested by White and Sedlacek (1986), each institution should study its own applicants and students to identify which noncognitive variables are useful predictors at which times and for which criterion.

TABLE 1

Persistence and Attrition of International Students

Criterion	No. Enrolled*	No. Not Enrolled	% Not Enrolled
After 1 semester	225	23	9%
After 2 semesters	194	54	22%
After 3 semesters	191	59	24%
After 4 semesters	178	71	29%
After 5 semesters	167	76	31%
After 6 semesters	159	86	35%
After 7 semesters	154	91	37%
After 8 semesters	152	96	39%

*Enrolled= being enrolled or having graduated

TABLE 2

Canonical Correlations (Rc) and Multiple Correlations (R) Predicting Enrollment Status* and Cumulative GPA for International Students

Criterion	Rc**	R**
After 1 semester	.36	.43
After 2 semesters	.35	.46
After 3 semesters	.39	.33
After 4 semesters	.35	.37
After 5 semesters	.38	.46
After 6 semesters	.34	.41
After 7 semesters	.36	.41
After 8 semesters	.38	.42

*Enrollment status referred to being enrolled or having graduated vs. not being enrolled.

**$p<.05$ for all Rc's and R's shown.

TABLE 3

Noncognitive Variables* That Significantly Added to Prediction in Each Analysis

Semester	Persistence**	GPA
After 1 semester	SC, RSA, Comm, Knowl, Lead, LRG, Rac	SC, Supp, RSA, Rac
After 2 semesters	Comm, Lead, LRG, SC, RSA, Supp, Rac, Knowl	SC, Supp, RSA, Lead
After 3 semesters	Comm, SC, RSA, Rac, Supp, Knowl, Lead, LRG	SC, Supp
After 4 semesters	Comm, Knowl, Supp, RSA, Rac, SC	SC, Supp
After 5 semesters	Comm, RSA, LRG, Supp, Rac, SC, Lead	SC, Supp, Lead
After 6 semesters	Knowl, Comm, Supp, Lead, Rac	SC, Supp
After 7 semesters	Knowl, Rac, Lead, Supp Comm, RSA	SC, Supp, RSA
After 8 semesters	Supp, LRG, Comm, RSA, Lead, Rac, Knowl	SC, Supp, LRG

*SC = Self-Confidence, RSA = Realistic self-appraisal, Comm = Demonstrated community service, Knowl = Knowledge acquired in a field, Lead = Leadership experience, LRG = Long-range goals, Rac= Understanding racism, Supp = Availability of strong support person.

**Enrolled or graduated.

TABLE 4

Percentage of Persistors and Nonpersistors Classified Correctly

Criterion	% Persistors*	% Nonpersistors
After 1 semester	75	70
After 2 semesters	72	67
After 3 semesters	71	66
After 4 semesters	65	65
After 5 semesters	69	67
After 6 semesters	67	63
After 7 semesters	66	65
After 8 semesters	69	64

*Enrolled or graduated.

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